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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,689	02/07/2001	Ji Hyun Hwang	MRE-08	3330

7590

08/22/2002

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EXAMINER

JONES, JUDSON

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 08/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/777,689

Applicant(s)

HWANG ET AL.

Examiner

Judson H. Jones

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6 is/are allowed.
- 6) ☒ Claim(s) 7-18, 23-25 and 28 is/are rejected.
- 7) ☒ Claim(s) 19-22, 26 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 26 July 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 14 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Besterling et al. in view of Holden. Besterling et al. discloses a gantry having a linear motor but does not disclose cooling the motor or disclose a temperature sensor used to produce a temperature signal that is in turn used to produce a control signal for the cooling system. However Holden teaches in column 2 lines 32-35 using a temperature sensor to produce a temperature signal that is in turn used to produce a control signal for a cooling system. Since Besterling et al. and Holden are both from the same field of endeavor, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a temperature sensor to produce a temperature signal to be used to produce a control signal for a cooling system in order to efficiently cool the system by providing cooling where needed and thus to increase the efficiency of the linear motor. While Holden discloses what appears to be a rotary motor driving a compressor, a linear motor can be considered as being a rotary motor that is split and then rolled flat. See Besterling et al. column 4 lines 16-23. All of the heating problems that exist in rotary motors are present in linear motors, and the methods of controlling heat in the two types of motors are similar.

In regard to claim 14, see Besterling et al. column 5 lines 31-36.

Claims 8 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Besterling et al. as modified by Holden as applied to claim 7 and further in view of Vollenwyder et al. (of record). Besterling et al. as modified by Holden discloses the cooling system for a gantry but does not disclose a fan. However Vollenwyder et al. discloses a fan for cooling a linear motor in the abstract of the patent. Since Vollenwyder et al. and Besterling et al. as modified by Holden are both from the same field of endeavor, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a fan supplying cooling air for the linear motor in place of the complex and expensive sealed refrigerant lines used in the Holden device in order to reduce the cost of the device.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Besterling et al. in view of Holden as applied to claim 7 above, and further in view of Hartzell, Jr. (of record). Besterling et al. as modified by Holden discloses the cooling system with the temperature sensor but does not disclose a nozzle connected to a valve. However Hartzell, Jr. teaches a nozzle connected to a valve in column 2 line 66 to column 3 line 9 for the purpose of increasing the efficiency of the cooling as described in column 4 lines 12-16. Since Hartzell, Jr. and Besterling et al. as modified by Holden are both from the same field of endeavor, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a nozzle connected to a valve to supply a flow of cooling air to the linear motor in order to increase the efficiency of the cooling.

Claims 10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Besterling et al. as modified by Holden as applied to claim 7 above, and further in view of Emshoff et al. Besterling et al. as modified by Holden discloses a cooling system for a gantry

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having a first cooling device but does not disclose a second control signal and a second cooling device. However, Emshoff et al. teaches in column 4 lines 52-67 a first cooling device comprising water flowing in hoses 18 and a second cooling device comprising a coolant gas also cooling the generator. Since Emshoff et al. and Besterling et al. as modified by Holden are both from the same field of endeavor, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a second cooling device in the Besterling et al. as modified by Holden apparatus in order to cool the apparatus even if one cooling device failed to operate satisfactory or did not provide sufficient cooling power, thus improving the performance of the device.

In regard to claim 12, see Emshoff et al. column 4 lines 25-31.

In regard to claim 13, see Emshoff et al. column 4 lines 62-67. Since the coolant gas is circulated through the electromagnetic device of Emshoff et al., it cools both the stator and the rotor.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Besterling et al. as modified by Holden and further in view of Straley. Besterling et al. as modified by Holden discloses the motor with the cooling system but does not disclose multiple temperature sensors. However Straley teaches multiple temperature sensors in column 2 lines 30-39 for measuring the temperature of each coil in the motor. Since Straley and Besterling et al. as modified by Holden are both from the same field of endeavor, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized multiple temperature sensors in the device of Besterling et al. as modified by Holden in order to more efficiently control the cooling for each coil in the motor.

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Claims 15, 17, 18 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Besterling et al. in view of Holden and Leuthen. Besterling et al. as modified by Holden discloses the cooling system for a gantry but does not disclose means to reduce the motor speed when the sensed temperature of the motor is above a predetermined temperature. However Leuthen teaches this idea in column 7 lines 62-64. Since Leuthen and Besterling et al. as modified by Holden are both from the same field of endeavor, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized speed reduction means based on motor temperature in the device of Besterling et al. as modified by Holden in order to protect the motor from damage from excessive heat.

Claims 16 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Besterling et al. as modified by Holden as applied to claim 7 above, and further in view of Yabu. Besterling et al. as modified by Holden discloses the cooling system for the linear motor but does not disclose an environmental sensor. However Yabu teaches that environmental factors are important for gantry systems used in projection exposure devices and further teaches environmental sensors in the abstract of the patent. Since Yabu and Besterling et al. as modified by Holden are both from the same field of endeavor, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized environmental sensors in the device of Besterling et al. as modified by Holden in situations where that device was used in projection exposure devices.

Allowable Subject Matter

Claims 1-6 are allowed.

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Claims 19-22, 26 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record does not disclose or teach temperature sensors being used to sense the temperatures of both the stator and the movable member of a linear motor.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Judson H Jones whose telephone number is 703-308-0115. The examiner can normally be reached on 8-4:30 M-F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3431 for regular communications and 703-305-3432 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JHJ

August 14, 2002


NESTOR RAMIREZ
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